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**PRC**

**PRELIMINARY ASSESSMENT/  
VISUAL SITE INSPECTION**

**THE GILLETTE COMPANY  
NORTH CHICAGO MANUFACTURING CENTER  
NORTH CHICAGO, ILLINOIS  
ILD 047 031 273**

**FINAL REPORT**

**Prepared for**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Waste Programs Enforcement  
Washington, DC 20460**

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EPA Region	:	5
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**EXECUTIVE SUMMARY**

Released 9/27/2018 -- TQ

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at The Gillette Company North Chicago Manufacturing Center (Gillette) facility (EPA Identification No. ILD 047 031 273) in North Chicago, Lake County, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritizing RCRA facilities for corrective action.

The facility manufactures various cosmetic and writing instrument chemical formulations, including active ingredients for deodorants and antiperspirants, shampoos, hairsprays, and dyes for pen ink. The facility regularly generates hazardous wastes that include waste methanol (F003), waste specially denatured alcohol (ethanol, SDA-40) (D001), waste P-225 (contains methanol, F003), a waste isopropanol and SDA-40 mixture (D001), a waste freon and SDA-40 mixture (F002), laboratory wastes (D001, D022, D035, F003, and F005), and laboratory packs (D- and U-listed wastes). The facility also regularly generates nonhazardous wastes, including empty chemical bags, various product line filter cakes, PAGO solids, lauryl alcohol residues, and PAGO ink residues. Other routine wastes generated by the facility include nonhazardous PAGO wastewater and sludge, process wastewater (D002), nonhazardous wastewater treatment sludge, used oil, and spent petroleum naphtha (D001).

Gillette and its predecessors have operated at the facility since 1959. The facility's buildings occupy about 70,000 square feet on 58 acres in a mixed-use area. Gillette employs about 65 people at the facility. The facility's current regulatory status is that of a large quantity generator of hazardous waste. From 1980 to 1989, the facility operated as a treatment, storage, or disposal (TSD) facility under interim status. The facility's RCRA Part A permit application listed container storage as its only TSD process. The facility's interim status Hazardous Waste Storage Area (SWMU 2) was closed in 1989 with Illinois Environmental Protection Agency (IEPA) approval. Before industrial operations began at the facility in 1959, the property was probably used for agricultural purposes.

The PA/VSI identified the following nine SWMUs and one AOC at the facility:

**Solid Waste Management Units**

1. Hazardous Waste Satellite Accumulation Areas
2. Hazardous Waste Storage Area
3. Special Waste Satellite Accumulation Areas
4. Special Waste Storage Area
5. PAGO Waste Treatment System
6. PAGO Sludge Storage Area
7. Wastewater Treatment Plant
8. Wastewater Treatment Sludge Storage Area
9. Used Oil Storage Area

**Area of Concern**

1. Former PAGO Building

The potential for a release from all SWMUs to the environment is low. Each of the SWMUs managing hazardous wastes are located indoors and have adequate secondary containment. The potential for a release from the Former PAGO Building (AOC 1) to ground water, surface water, and on-site soils is high. Soils in this AOC are contaminated with PAGO, a chemical blend of sodium hydroxide, aqua ammonia, sulfuric acid, oleum, pigment, salt, di-o-tolylguanidine, and hydrochloric acid. The facility has not investigated the nature or extent of any contamination at this location but intends to remove any affected soils when a new boiler building is erected in April 1993.

Ground water is used as an industrial and drinking water source more than 4 miles west of the facility. Wells drawing water from the unconsolidated and bedrock aquifers are upgradient of the facility.

Surface water runoff flows through storm sewers to the Skokie Drainage Ditch, which flows through the west part of the facility property and is the closest surface water body. The ditch's 100-year flood plain is on facility property but away from the buildings, SWMUs, and the AOC. The ditch discharges into the North Branch of the Chicago River more than 5 stream miles from the facility. It is not likely that the drainage ditch is used recreationally. Lake Michigan is located about 2.5 miles east of the facility. Chicago and North Chicago operate separate drinking water intakes in Lake Michigan at locations more than 15 stream miles from the facility.

The nearest school, the Greenbay School, is located less than 1 mile southeast of the facility. The facility has locked entrances, and all visitors are required to sign in at the facility's Office Building. The entire facility is surrounded by fencing.

**EXECUTIVE SUMMARY**

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at The Gillette Company North Chicago Manufacturing Center (Gillette) facility (EPA Identification No. ILD 047 031 273) in North Chicago, Lake County, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritizing RCRA facilities for corrective action.

The facility manufactures various cosmetic and writing instrument chemical formulations, including active ingredients for deodorants and antiperspirants, shampoos, hairsprays, and dyes for pen ink. The facility regularly generates hazardous wastes that include waste methanol (F003), waste specially denatured alcohol (ethanol, SDA-40) (D001), waste P-225 (contains methanol, F003), a waste isopropanol and SDA-40 mixture (D001), a waste freon and SDA-40 mixture (F002), laboratory wastes (D001, D022, D035, F003, and F005), and laboratory packs (D- and U-listed wastes). The facility also regularly generates nonhazardous wastes, including empty chemical bags, various product line filter cakes, PAGO solids, lauryl alcohol residues, and PAGO ink residues. Other routine wastes generated by the facility include nonhazardous PAGO wastewater and sludge, process wastewater (D002), nonhazardous wastewater treatment sludge, used oil, and spent petroleum naphtha (D001).

Gillette and its predecessors have operated at the facility since 1959. The facility's buildings occupy about 70,000 square feet on 58 acres in a mixed-use area. Gillette employs about 65 people at the facility. The facility's current regulatory status is that of a large quantity generator of hazardous waste. From 1980 to 1989, the facility operated as a treatment, storage, or disposal (TSD) facility under interim status. The facility's RCRA Part A permit application listed container storage as its only TSD process. The facility's interim status Hazardous Waste Storage Area (SWMU 2) was closed in 1989 with Illinois Environmental Protection Agency (IEPA) approval. Before industrial operations began at the facility in 1959, the property was probably used for agricultural purposes.

A wetland more than 2 acres in size is located on site and directly east of the facility buildings in the Skokie Drainage Ditch. Another wetland complex more than 2 acres in size is located about 0.25 mile north of the facility.

PRC recommends no further action for any of the SWMUs at the facility. PRC recommends that the facility investigate the nature and extent of any soil contamination at the Former PAGO Building (AOC 1) and remediate any affected soils.

## 1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.



The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of The Gillette Company North Chicago Manufacturing Center (Gillette) facility (EPA Identification No. ILD 047 031 273) in North Chicago, Illinois. The PA was completed on November 30, 1992. PRC gathered and reviewed information from Illinois Environmental Protection Agency (IEPA) and from EPA Region 5 RCRA files. Supplemental information was gathered from the Federal Emergency Management Agency (FEMA), the Illinois State Geological Survey (ISGS), the Illinois Department of Conservation (IDC), the U.S. Department of Agriculture (USDA), the U.S. Department of Commerce (USDC), the U.S. Geological Survey (USGS), and the National Oceanic and Atmospheric Administration (NOAA). The VSI was conducted on December 8, 1992. It included

interviews with facility representatives and a walk-through inspection of the facility. PRC identified nine SWMUs and one AOC at the facility.

PRC completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included as Attachment A. The VSI is summarized and seventeen inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C.

## **2.0 FACILITY DESCRIPTION**

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors.

### **2.1 FACILITY LOCATION**

The Gillette facility is located at 3500 West 16th Street in North Chicago, Lake County, Illinois (latitude 45°19'53" N and longitude 87°52'45" W). Figure 1 shows the location of the facility in relation to the surrounding topographic features.

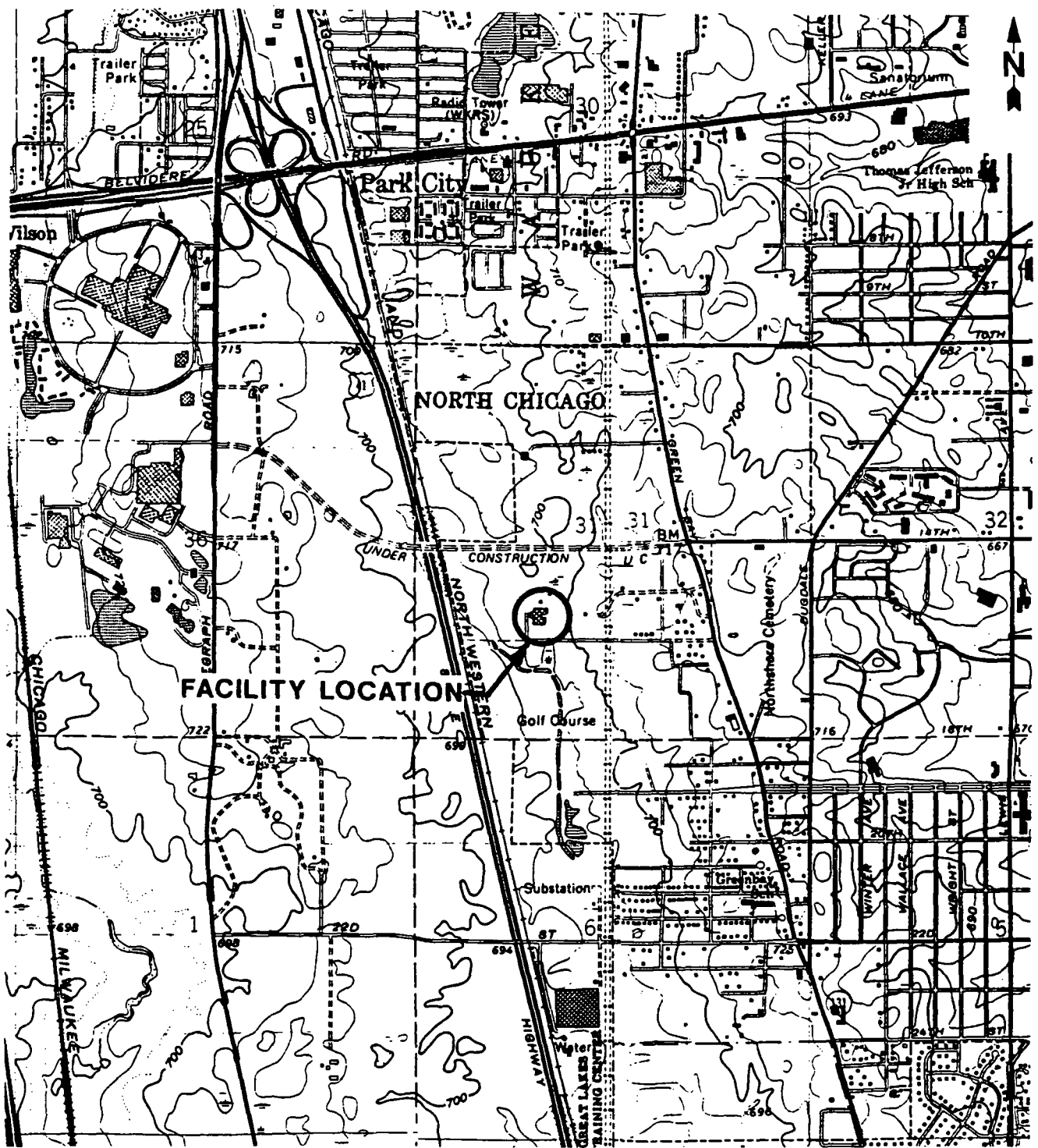
The facility is bordered on the north by forest preserves and a closed landfill; to the east by several residences; to the south by a golf course; and to the west by a railroad line, U.S. Route 41, and an industrial park that is currently under development.

### **2.2 FACILITY OPERATIONS**

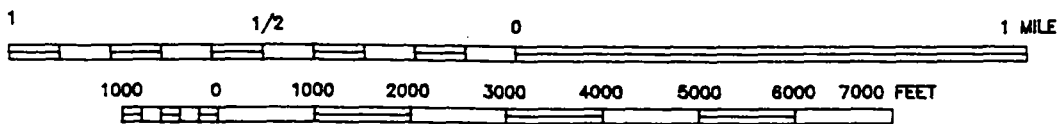
Gillette manufactures various cosmetic and writing instrument chemical formulations at the facility, including active ingredients for deodorants and antiperspirants, shampoos, hairsprays, and dyes for pen inks. Table 1 lists the facility's products and their primary components. In 1991, the facility manufactured over 24,000,000 pounds of these products.

When raw materials are delivered to the facility in drums or in bulk, they are stored in a raw materials warehouse or in outdoor and indoor aboveground tanks. These raw materials are added to various reaction vessels as part of the facility's production processes. After product formulation, the products are placed in containers and shipped off site to other Gillette end-product manufacturing facilities. Wastes generated during the production processes are typically decanted from reaction vessels into satellite waste accumulation drums, or they are discharged to the facility's wastewater treatment plant. Solid wastes generated from facility operations and the SWMUs where they are managed are discussed in detail in Section 2.3.

Gillette and its predecessors have operated at the facility since 1959. The Toni Company purchased the property in 1957, and the construction of the original two facility buildings was completed in 1959. Since then, the facility has added several products to its output, and ten more buildings have been erected. The facility's buildings comprise about 70,000 square feet on the facility's 58 acres. In 1966, Gillette purchased the Toni Company. Gillette currently employs about 65 people at the facility and operates 24 hours each day, 340 days each year. Access is



SCALE 1:24000



SCALE 1"=2,000'



QUADRANGLE LOCATION

SOURCE: MODIFIED FROM USGS, LIBERTYVILLE AND WAUKEGAN QUADRANGLES, 1980

THE GILLETTE COMPANY  
NORTH CHICAGO MANUFACTURING CENTER  
NORTH CHICAGO, ILLINOIS

**FIGURE 1**  
**FACILITY LOCATION**

**PRC** ENVIRONMENTAL MANAGEMENT, INC.

**TABLE 1**  
**PRODUCTS**

<u>Product Name</u>	<u>Primary Components</u>
ACH-20	Aluminum powder Hydrochloric acid
APACHE	ACH-20
ES-IV	ACH-20 Glycine Zirconium hydroxide Hydrochloric acid
IVY	ACH-20 Glycine Hydrochloric acid Zirconium carbonate
ZIP	IVY
ZAG	Glycine Hydrochloric acid Zirconium carbonate
APEX	ACH-20 ZAG
ULTREX	Ultrafine APEX
SQUAT-25	Dimethyl stearamine Benzyl chloride Stearyl alcohol
SQUAT-95	Isopropanol Dimethyl stearamine Sodium bicarbonate Benzyl chloride
AMMONYX	Isopropanol SQUAT-95
DEAL	Sodium Methylate Diethanolamine Methyl laurate
BARBY (Discontinued in 1989)	Aqua ammonia Dimethyl ethyl malonate 1-Ethyl-2-thiourea Sodium methylate Hydrochloric acid

**TABLE 1 (Continued)**  
**PRODUCTS**

<u>Product Name</u>	<u>Primary Components</u>
PAGO	Sodium hydroxide Aqua ammonia Sulfuric acid Oleum Pigment Salt Di-o-tolylguanidine Hydrochloric acid
RM-100	Aqua ammonia Sulfur dioxide
P-225	Specially denatured alcohol (90%) Gantrez
TEALS	Lauryl alcohol Chlorosulfonic acid Triethanolamine Formaldehyde
SAL	Aqua ammonia Lauryl alcohol Chlorosulfonic acid Phosphoric acid Citric acid 5-Chloro-2-methyl-4-isothiazolin-3-one Hydrogen peroxide
ALES	Aqua ammonia Chlorosulfonic acid Phosphoric acid Citric acid Formaldehyde Ethoxylated lauryl alcohol
LIQUAMID	Sodium methylate Diethanolamine Coconut oil
ZBC	Zirconium basic Sulfate Sodium carbonate
ALCHLOR	Aluminum oxide Hydrochloric acid

Source: Gillette, 1992b

restricted by fencing that surrounds the facility. Guests are required to sign in at the Office Building upon entering the property.

Facility representatives believe that the property was probably used for agricultural purposes before the Toni Company began operating at the facility in 1959.

### **2.3 WASTE GENERATION AND MANAGEMENT**

The facility regularly generates hazardous and nonhazardous wastes. Each of the facility's hazardous and nonhazardous wastes are managed in the facility's SWMUs, which are identified in Table 2. The facility layout, including SWMUs and AOCs, is shown in Figure 2. The facility's waste streams are summarized in Table 3.

Byproducts of the chemical production processes at the facility include various hazardous wastes, including waste methanol (F003), waste specially denatured alcohol (ethanol, SDA-40) (D001), waste P-225 (contains methanol, F003), and a waste isopropanol and SDA-40 mixture (D001). Until 1991, the facility performed particle size analyses on various products as part of its quality control procedures. These analyses generated a waste freon and SDA-40 mixture (F002). Currently, the facility performs quality control laboratory testing on various products, generating solvent laboratory wastes (D001, D022, D035, F003, and F005). Laboratory packs (D- and U-listed wastes) are also generated during infrequent laboratory inventory cleanups. All of these hazardous wastes are managed in the Hazardous Waste Satellite Accumulation Areas (SWMU 1) and the Hazardous Waste Storage Area (SWMU 2).

In 1991, the facility generated 770 gallons of waste methanol, 110 gallons of waste SDA-40, 220 gallons of waste P-225, 330 gallons of the waste isopropanol and SDA-40 mixture, 55 gallons of the waste freon and SDA-40 mixture, and 220 gallons of laboratory wastes. These wastes were all treated off site by Safety-Kleen Corporation of Newcastle, Kentucky, and Dolton, Illinois, or by Trade Waste Incineration of Sauget, Illinois (Gillette, 1992a).

Nonhazardous wastes generated from production processes include empty chemical bags, various product line filter cakes, and PAGO solids. These wastes are classified as nonhazardous special wastes and are managed in the Special Waste Satellite Accumulation Areas (SWMU 3) and the Special Waste Storage Area (SWMU 4). SWMUs 3 and 4 also manage lauryl alcohol residues from the cleaning of tank truck hoses and PAGO ink residues from PAGO quality control analyses. The special wastes are landfilled by Browning-Ferris Industries (BFI) of Winthrop Harbor, Illinois. In 1991, the facility generated 116 55-gallon drums of these special wastes (Gillette, 1992b).

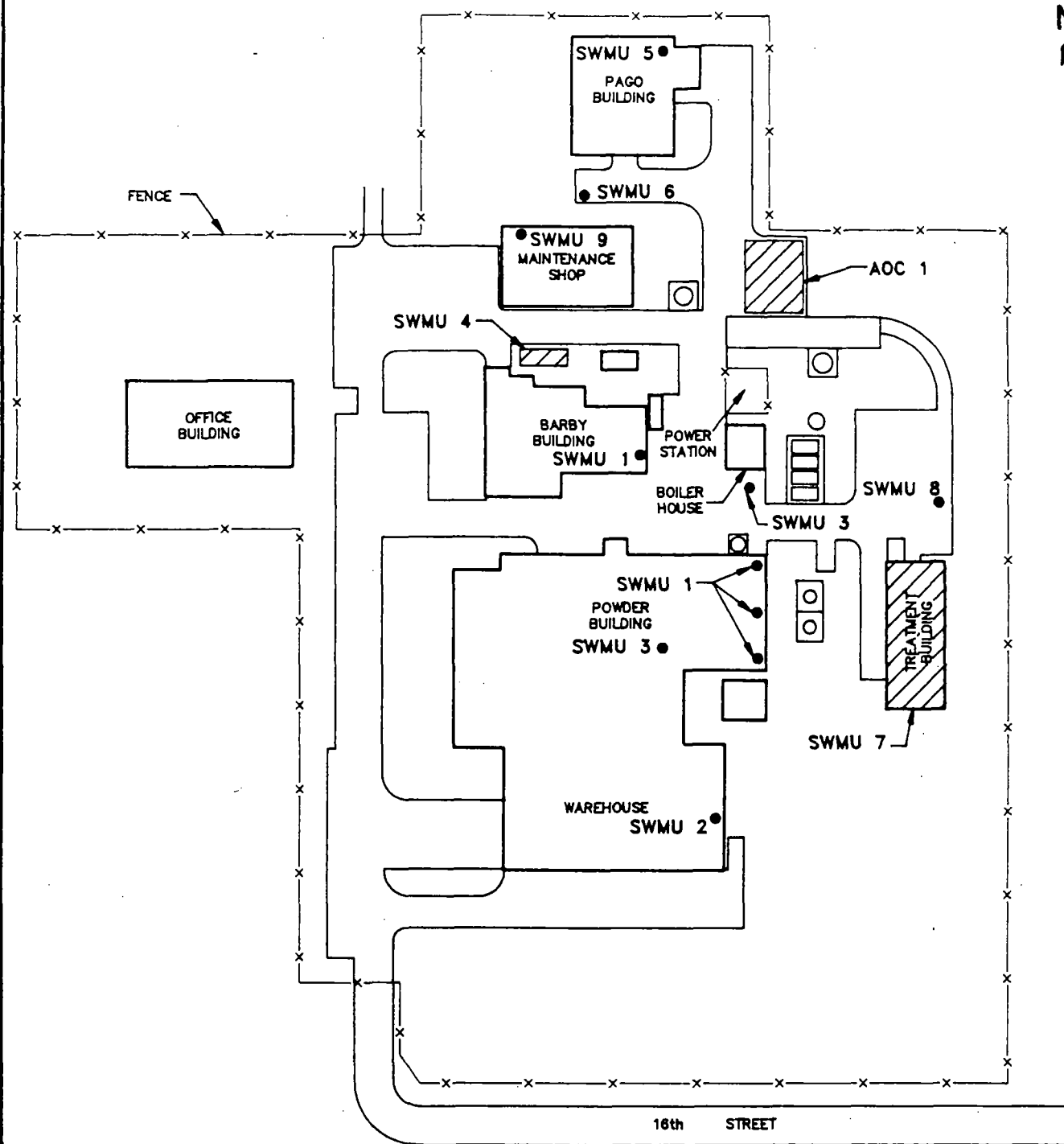
**TABLE 2**  
**SOLID WASTE MANAGEMENT UNITS**

<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit<sup>a</sup></u>	<u>Status</u>
1	Hazardous Waste Satellite Accumulation Areas	No	Active for accumulation of hazardous wastes
2	Hazardous Waste Storage Area	Yes	Underwent IEPA-approved RCRA closure in 1989; active for less than 90-day storage of hazardous wastes
3	Special Waste Satellite Accumulation Areas	No	Active for accumulation of nonhazardous wastes
4	Special Waste Storage Area	No	Active for storage of nonhazardous wastes
5	PAGO Waste Treatment System	No	Active for treatment of nonhazardous waste
6	PAGO Sludge Storage Area	No	Active for storage of nonhazardous waste
7	Wastewater Treatment Plant	No	Active for treatment of hazardous and nonhazardous waste
8	Wastewater Treatment Sludge Storage Area	No	Active for storage of nonhazardous waste
9	Used Oil Storage Area	No	Active for storage of nonhazardous waste

Note:

<sup>a</sup> A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.





### LEGEND

- SWMU 1 HAZARDOUS WASTE SATELLITE ACCUMULATION AREAS
- SWMU 2 HAZARDOUS WASTE STORAGE AREA
- SWMU 3 SPECIAL WASTE SATELLITE ACCUMULATION AREAS
- SWMU 4 SPECIAL WASTE STORAGE AREA
- SWMU 5 PAGO WASTE TREATMENT SYSTEM
- SWMU 6 PAGO SLUDGE STORAGE AREA
- SWMU 7 WASTEWATER TREATMENT PLANT
- SWMU 8 WASTEWATER TREATMENT SLUDGE STORAGE AREA
- SWMU 9 USED OIL STORAGE AREA
- AOC 1 FORMER PAGO BUILDING

30' 0 30' 60'  
SCALE: 1" = 60'

THE GILLETTE COMPANY  
NORTH CHICAGO MANUFACTURING CENTER  
NORTH CHICAGO, ILLINOIS

FIGURE 2  
FACILITY LAYOUT

**PRC** ENVIRONMENTAL MANAGEMENT, INC.

SOURCE: MODIFIED FROM GILLETTE SKETCH RECEIVED  
BY PRC ON DECEMBER 8, 1992

**TABLE 3**  
**SOLID WASTES**

<u>Waste/EPA Waste Code<sup>a</sup></u>	<u>Source</u>	<u>Solid Waste Management Unit<sup>b</sup></u>
Waste methanol/F003	Various production processes	SWMUs 1 and 2
Waste SDA-40/D001	P-225 production	SWMUs 1 and 2
Waste P-225/F003	Various production processes	SWMUs 1 and 2
Waste isopropanol and SDA-40 mixture/D001	Various production processes	SWMUs 1 and 2
Waste freon and SDA-40 mixture/D001 and F002	Physical analyses	SWMUs 1 and 2
Laboratory wastes/D001, D022, D035, F003, and F005	Laboratory analyses	SWMUs 1 and 2
Laboratory packs/Various D- and U-listed wastes	Laboratory cleanup	SWMU 2
Empty chemical bags/NA	Various production processes	SWMUs 3 and 4
Filter cakes/NA	Various production processes	SWMUs 3 and 4
PAGO solids/NA	PAGO production	SWMUs 3 and 4
Lauryl alcohol residues/NA	Cleaning tank truck hoses	SWMUs 3 and 4
PAGO ink residues/NA	Ink dye analyses	SWMUs 3 and 4
PAGO wastewater/NA	PAGO production	SWMU 5
PAGO sludge/NA	PAGO wastewater treatment	SWMU 6
Process wastewater/D002	Various production processes	SWMU 7
Wastewater treatment sludge/NA	Wastewater treatment	SWMU 8

**TABLE 3 (Continued)**  
**SOLID WASTES**

<u>Waste/EPA Waste Code<sup>a</sup></u>	<u>Source</u>	<u>Solid Waste Management Unit<sup>b</sup></u>
Used oil/NA	Routine maintenance	SWMU 9
Spent petroleum naphtha/D001	Parts cleaner	None

Notes:

<sup>a</sup> Not applicable (NA) designates nonhazardous waste.

<sup>b</sup> "None" indicates that the waste stream is not managed on site.

PAGO production results in a nonhazardous PAGO wastewater that is treated in the PAGO Waste Treatment System (SWMU 5). The treated PAGO wastewater is separated into solid and liquid phases. The solid phase, PAGO sludge, is stored in the PAGO Sludge Storage Area (SWMU 6); the liquid phase is pumped to the Wastewater Treatment Plant (SWMU 7) for further treatment. PAGO sludge is a nonhazardous special waste that is landfilled by BFI of Winthrop Harbor, Illinois. In 1991, the facility generated a total of 60 cubic yards of PAGO sludge (Gillette, 1992b).

Other process wastewaters, which may exhibit the characteristic of corrosivity, are also pumped into the Wastewater Treatment Plant (SWMU 7). After the wastewater is treated in the unit, it is separated into solid and liquid phases. The nonhazardous solid phase is stored in the Wastewater Treatment Sludge Storage Area (SWMU 8) before it is landfilled by BFI of Winthrop Harbor, Illinois. The liquid phase is pumped to the North Shore Sanitary District (NSSD), the local publicly-owned treatment works (POTW).

The facility's Maintenance Shop regularly generates nonhazardous used oil from machinery gear boxes and other production equipment. This used oil is stored in the Used Oil Storage Area (SWMU 9) in the Maintenance Shop. A Safety-Kleen® parts washer in the Maintenance Shop also regularly generates spent petroleum naphtha (D001), which is collected directly from the parts washer and transported off site for recycling by Safety-Kleen Corporation of Elgin, Illinois. In 1991, the facility generated 98 gallons of this waste (Gillette, 1992a).

The facility irregularly generates wastes comprised of various off-specification, outdated, or spilled raw materials or product. These wastes may be shipped to any of the facility's regularly used, off-site RCRA treatment, storage, or disposal (TSD) facilities noted above.

In 1991, the facility generated a total of 5,885 gallons of D018 waste. This waste consisted of drum liners found to be contaminated with benzene and was treated off-site by Trade Waste Incineration of Sauget, Illinois, and Safety-Kleen Corporation of Newcastle, Kentucky. The facility also generated 55 gallons of D001 wastes that were recycled off site by Safety-Kleen Corporation of Dolton, Illinois, and 385 gallons of D002 wastes that were treated off site by Trade Waste Incineration of Sauget, Illinois. The D001 and D002 wastes were all off-specification, outdated, or spilled hazardous materials (Gillette, 1992a).

## **2.4 HISTORY OF DOCUMENTED RELEASES**

No history of documented releases to ground water, surface water, air, and on-site soils at the facility exists in EPA or IEPA files. However, during the VSI, facility representatives

indicated that soils beneath the Former PAGO Building (AOC 1) were stained blue, the color of PAGO. The stained soils were discovered in the spring of 1991 when the building was demolished. The facility has not investigated the nature and extent of contamination but intends to remove all affected soils in April 1993, when a new boiler house is erected at the location (Gillette, 1993).

In 1983, the facility reported a discharge of 1,400 gallons of ethanol from one of the bulk storage tanks east of the production building. The tank released its contents into the containment dike, but a valve that was left open allowed ethanol to flow out of the dike and into the adjacent Skokie Drainage Ditch. No action was taken by IEPA.

During the VSI, facility representatives also informed PRC that two inadvertent releases to NSSD, the local POTW, have occurred. In 1990, 450 gallons of ACH-20 were accidentally discharged to the facility's Wastewater Treatment Plant (SWMU 7). This discharge overloaded the treatment plant, and the resulting aluminum hydroxide gel passed through the system into the POTW. In 1992, about 400 gallons of propylene glycol was accidentally discharged to the Wastewater Treatment Plant (SWMU 7). This created a high biological oxygen demand (BOD) loading on the system. Facility operations were slowed to allow a gradual discharge to the POTW.

## **2.5 REGULATORY HISTORY**

Gillette filed a Notification of Hazardous Waste Activity Form with EPA on August 12, 1980. This form indicated that Gillette intended to operate as a generator and TSD facility managing D001, D002, and F005 wastes (Gillette, 1980a). Gillette filed a RCRA Part A permit application with EPA on November 17, 1980. The form indicated that Gillette intended to store 15,800 gallons of D001 and F005 wastes in containers (S01) (Gillette, 1980b). On March 22, 1982, EPA acknowledged the facility's permit application and granted the facility RCRA interim status (U.S. EPA, 1982).

On January 27, 1982, IEPA inspected the facility for RCRA compliance. In a letter to the facility, IEPA noted that the facility was in compliance with RCRA regulations but that it should not be regulated as a TSD facility because it only generated D001 wastes that were recycled off site (IEPA, 1982a and 1982b). However, in a letter to the facility dated April 15, 1982, IEPA acknowledged that waste methanol is a listed hazardous waste (F003) and that the facility's permit application was valid (IEPA, 1982c).

The facility filed an amended Notification of Hazardous Waste Activity Form with EPA on March 24, 1986. The form added F002 and F003 waste streams (Gillette, 1986; U.S. EPA, 1986).

On September 1, 1987, IEPA inspected the facility for RCRA compliance. Based on IEPA's inspection, EPA issued a notice of violation (NOV) to the facility for failure to comply with the land disposal restrictions contained in 40 Code of Federal Regulations (CFR) Part 268 (IEPA, 1987; U.S. EPA, 1988). The facility took actions to correct the areas of noncompliance noted in the NOV and notified EPA of these actions in April and June 1988 (Gillette, 1988a and 1988b).

In August 1988, Gillette notified IEPA that it did not intend to store hazardous wastes on site for more than 90 days (Gillette, 1988c). Gillette filed a closure plan for the Hazardous Waste Storage Area (SWMU 2) with IEPA on October 24, 1988 (Gillette, 1993), and IEPA conditionally approved the plan on December 23, 1988 (IEPA, 1988).

On January 24, 1989, IEPA again inspected the facility for RCRA compliance, and the facility was found to be in compliance (U.S. EPA, 1989). On September 12, 1989, the facility completed closure activities for the Hazardous Waste Storage Area (SWMU 2) (Gillette, 1993). On September 12, 1989, IEPA approved the closure and withdrew the facility's RCRA Part A permit application (IEPA, 1989). The facility is currently operating as a large-quantity generator of hazardous waste.

The facility discharges treated wastewater to NSSD. The facility filed a Discharge Control Document (DCD), a permit application, with NSSD in November 1992. The facility received a draft DCD from NSSD in December 1992 (NSSD, 1992). However, the facility has been granted interim approval to discharge its treated wastewaters to the POTW until a final DCD is approved.

The facility operates under IEPA air permit numbers 73110008, 74080142, 80120010, 81100058, 82120049, 83110056, 84040059, and 85030060. These permits regulate emissions from various reaction vessels and associated scrubbers, chemical storage tanks, and the facility's natural gas-fired boiler (Gillette, 1992b). No record of permit violations exist in IEPA files.

The facility applied for a National Pollutant Discharge Elimination System (NPDES) storm water discharge permit in December 1991 (Gillette, 1991), but IEPA has not yet issued a permit to the facility.

The facility has never stored raw materials, products, or wastes in underground storage tanks.

## **2.6 ENVIRONMENTAL SETTING**

This section describes the climate; flood plain and surface water; geology and soils; and ground water in the vicinity of the facility.

### **2.6.1 Climate**

The climate in Lake County is continental and is characterized by frequent changes in temperature, humidity, cloudiness, and wind direction. The lowest average daily temperature in January is 24.3 degrees Fahrenheit (°F); the highest average daily temperature in July is 75.1 °F (NOAA, 1974).

The total annual precipitation for the county is about 34 inches (NOAA, 1974). The mean annual lake evaporation for the area is about 30 inches (USDC, 1968). The 1-year, 24-hour maximum rainfall is about 2.2 inches (USDC, 1963). The prevailing wind in northeast Illinois is generally westerly, with an average annual wind speed of about 10 miles per hour (NOAA, 1974).

### **2.6.2 Flood Plain and Surface Water**

The west end of the facility's property lies in the 100-year flood plain of the Skokie Drainage Ditch. However, all buildings, SWMUs, and the AOC are located outside the flood plain (FEMA, 1980).

Surface water runoff from the facility flows directly into the 16th Street storm sewers, which are located directly south of the facility (PRC, 1993). The sewers discharge into the Skokie Drainage Ditch, which flows through the west end of the facility property. Wetlands are located on site along the Skokie Drainage Ditch (USDA, 1990). The ditch discharges into the North Branch of the Chicago River more than 5 stream miles south of the facility. The Chicago River discharges into Lake Michigan (USGS, 1960).

Lake Michigan is located about 2.5 miles east of the facility. Chicago and North Chicago operate drinking water intakes in Lake Michigan at locations more than 15 stream miles away from the facility (USGS, 1960). Lake Michigan and the Chicago River are both used recreationally.

### **2.6.3 Geology and Soils**

The soils in the area are Morley series soils that consist of deep, gently sloping to steep, well-drained to moderately well-drained soils that formed in silty deposits and calcareous glacial till. The soil has moderately slow permeability because the subsoil is somewhat clayey. The available moisture capacity is high, and the water table is generally at least 3 feet below the surface (USDA, 1968). In 1990, Gillette drilled several on-site construction test borings. The limited data gathered during the boring project indicates that topsoil is underlain by at least 20 feet of silty clay and silt deposits with discontinuous sand seams (Gillette, 1992b).

Regional geologic information is presented here because little site-specific geologic information is available. The uppermost unconsolidated deposits, or drift, consist of Pleistocene gray clayey and silty clayey till of the Blodgett Moraine. This till is part of the Lake Border Morainic System which is a division of the Wadsworth Member of the Wedron Formation. These moraines are relatively low in pebble and cobble content, and are commonly mantled by 1 to 2 feet of windblown silt (loess) (Willman and Lineback, 1970).

The uppermost consolidated bedrock unit, a Silurian age dolomite formation, is overlain by about 200 feet of drift. In the North Chicago area, the dolomite is approximately 200 feet thick and ranges in composition from extremely argillaceous to exceptionally pure. The Silurian dolomite is underlain by approximately 150 feet of Ordovician age Maquoketa Formation shale with interbedded dolomite or limestone, 300 feet of Galena-Platteville Formation dolomite and limestone, and 150 feet of Glenwood-St. Peter Formation sandstone. The Prairie du Chien, Trempealeau, and Franconia Formations, straddling the Cambrian-Ordovician boundary, consist of dolomites with varying proportions of sandstone and shale and total about 300 feet in thickness. The underlying Cambrian deposits are the Ironton-Galesville Formation sandstone, the Eau Claire Formation shale and siltstone, and the Mt. Simon Formation sandstone. These formations are underlain by Precambrian crystalline rocks (Willman, 1971; Suter et al, 1959).

### **2.6.4 Ground Water**

Data from Gillette's 1990 soil borings indicate that ground water was encountered during the investigation at between 4 and 10 feet below ground surface. The data does not indicate if this is a perched water table or the unconsolidated drift aquifer (Gillette, 1992b).

Because no other site-specific information is available, regional ground-water information is presented here. Ground water is obtained from four major aquifer systems in northeastern Illinois. These include the glacial drift system, the shallow bedrock system, and two deep



bedrock systems. The aquifer systems are distinguished by their hydrologic properties and recharge source areas (Hughes et al, 1966). In the Lake County area, the possibility of water-bearing sand and gravel within the glacial drift is fair to good, although supplies are localized and yield only enough water for farm or domestic supplies. Ground-water well depths are typically 35 to 100 feet (Bergstrom et al, 1955).

The shallow bedrock aquifer system contains water that is obtained from fractures and solution openings in the Silurian dolomite formation. Recharge is obtained by percolation of local precipitation through the overlying glacial drift (Hughes et al, 1966).

The deep bedrock aquifer systems include the Cambrian-Ordovician aquifer system and the Mt. Simon aquifer system. The Cambrian-Ordovician aquifer system comprises the Glenwood and St. Peter Formations of middle Ordovician age and Ironston and Galesville Formation sandstones of late Cambrian age. The top of the Cambrian-Ordovician aquifer is at the top of or within the middle Ordovician Galena-Platteville dolomite; the bottom of the system is located in the impermeable shales and dolomites of the upper and middle parts of the Cambrian Eau Claire Formation. The aquifer system spans a thickness of approximately 500 feet (Hughes et al, 1966).

The Mt. Simon aquifer is the second deep bedrock aquifer system and is bounded above by the relatively impermeable shales and dolomites of the upper and middle parts of the Eau Claire Formation and below the crystalline Precambrian basement. The upper and middle parts of the Eau Claire Formation act as an aquitard. The Mt. Simon Formation sandstone is nearly 1,700 feet thick, but only the uppermost 275 feet yield potable water because the water below that depth is too highly mineralized for most purposes (Hughes et al, 1966).

## **2.7 RECEPTORS**

The facility occupies about 58 acres in a mixed-use industrial and residential area in North Chicago, Illinois. North Chicago has a population of about 35,000 people.

The facility is bordered on the north by forest preserves and a closed landfill; to the east by several residences; to the south by a golf course; and to the west by a railroad line, U.S. Route 41, and an industrial park that is currently under development. The nearest school, the Greenbay School, is located less than 1 mile southeast of the facility. The facility has locked entrances, and all visitors are required to sign in at the facility's Office Building. The entire facility is surrounded by fencing.

Surface water runoff flows through storm sewers to the Skokie Drainage Ditch, which flows through the west part of the facility property and is the closest surface water body. The ditch discharges into the North Branch of the Chicago River more than 5 stream miles south of the facility. It is not likely that the drainage ditch is used recreationally. Lake Michigan is located about 2.5 miles east of the facility. Chicago operates drinking water intakes in Lake Michigan at locations more than 15 stream miles from of the facility. North Chicago also operates drinking water intakes even further from the facility.

Ground water is used as an industrial and drinking water source more than 4 miles west of the facility. Wells drawing water from the shallow and bedrock aquifers are upgradient of the facility.

A wetland more than 2 acres in size is located on site and directly east of the facility buildings in the Skokie Drainage Ditch (USDA, 1990). This wetland has not been classified by IDC. Another wetland complex more than 2 acres in size is located about 0.25 mile north of the facility. The nearest of the wetlands in this complex are classified as palustrine, deciduous, needle-leaved shrub wetlands. Other wetlands in the complex are classified as forested, emergent, aquatic bed, and open-water wetlands (IDC, 1981). Wetlands also exist in other areas around the facility. No other sensitive environments were identified during the PA/VSI.

### 3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the nine SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

#### **SWMU 1**

#### **Hazardous Waste Satellite Accumulation Areas**

**Unit Description:**

Hazardous Waste Satellite Accumulation Areas are located throughout the facility in the manufacturing buildings. Typically, these units consist of two drums that are stored on a pallet near a production area. When the drums are full, they are moved into the Hazardous Waste Storage Area (SWMU 2). During the VSI, three of these areas were observed in the Powder Building, and one was observed in the BARBY Building.

**Date of Startup:**

This unit began operating in early 1986 (Gillette, 1993).

**Date of Closure:**

This unit is active.

**Wastes Managed:**

Hazardous Waste Satellite Accumulation Areas manage a variety of wastes, including waste methanol (F003), waste SDA-40 (D001), waste P-225 (F003), waste isopropanol and SDA-40 mixture (D001), waste freon and SDA-40 mixture (D001 and F002), and laboratory waste (D001, F003, F005, D022, and D035).

**Release Controls:**

Each of the Hazardous Waste Satellite Accumulation Areas contained sealed drums that are stored on pallets. They were all inside the facility's Powder and BARBY Buildings, which have concrete floors and walls. Liquids entering the floor drains in the buildings are directed to the facility's Wastewater Treatment Plant (SWMU 7).

**History of  
Documented Releases:**

No releases from this unit have been documented.

**Observations:** During the VSI, the three satellite accumulation areas in the Powder Building contained sealed drums that were labelled as hazardous waste. The concrete floor in the Powder Building is aged and cracked in places. The satellite accumulation area in the BARBY Building was temporarily inactive. PRC did not observe any evidence of release from the accumulation areas (see Photographs No. 13, 14, 15, and 16).

## **SWMU 2**

### **Hazardous Waste Storage Area**

**Unit Description:** The Hazardous Waste Storage Area is located in the southeast corner of the warehouse. After drums of hazardous waste are filled in the Hazardous Waste Satellite Accumulation Areas (SWMU 1), they are sealed and moved into this unit, where they are stored for less than 90 days. The unit typically contains no more than two drums, but its capacity is sixteen drums.

**Date of Startup:** This unit began operating in February 1980 (Gillette, 1993).

**Date of Closure:** This unit's RCRA closure was approved by IEPA in September 1989; it currently operates as a less than 90-day hazardous waste storage area.

**Wastes Managed:** This unit manages all hazardous wastes generated at the facility. During the VSI, it contained two drums of waste methanol (F003), one drum of waste P-225 (F003), and one drum of absorbent that was used to clean up a solvent spill (D001).

**Release Controls:** This unit is located inside the facility's warehouse. The concrete floor is sealed to the concrete masonry unit walls or to a concrete dike that partially surrounds the unit. The drums stored in the unit are sealed.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** During the VSI, the unit contained three drums of F003 and one drum of D001 wastes. The floor appeared clean with no cracks,

and there was no evidence of a release from this unit (see Photograph No. 11).

### **SWMU 3**

#### **Special Waste Satellite Accumulation Areas**

**Unit Description:**

One Special Waste Satellite Accumulation Area is located in the Powder Building. The drums in this area store empty glycine bags and filter cake generated from ACH-20 production. Another Special Waste Satellite Accumulation Area is located outside the south wall of the Boiler House. This unit stores drums of nonhazardous filter cakes generated from various chemical production processes. When the drums in these two areas are full, they are moved into the Special Waste Storage Area (SWMU 4).

**Date of Startup:**

This unit began operating in early 1981 (Gillette, 1993).

**Date of Closure:**

This unit is active.

**Wastes Managed:**

This unit manages various nonhazardous wastes including empty chemical bags and filter cakes generated from chemical production processes.

**Release Controls:**

One of the Special Waste Satellite Accumulation Areas is located indoors in the Powder Building. The floor and walls in this area are constructed of concrete. The concrete floor in the Powder Building is cracked in places; however, any spills would be directed into floor drains and into the Wastewater Treatment Plant (SWMU 7). The other area is located outdoors, on the asphalt that surrounds the facility. The asphalt and concrete surrounding the facility is cracked in places. In both areas, the drums were sealed and stored on pallets.

**History of  
Documented Releases:**

No releases from this unit have been documented.

**Observations:**

During the VSI, the Special Waste Satellite Accumulation Area in the Powder Building contained four drums, and the outdoor area contained fourteen drums. The drums in both of these areas were

sealed. PRC did not observe any evidence of a release from the accumulation areas (see Photographs No. 6 and 12).

#### **SWMU 4**

#### **Special Waste Storage Area**

##### **Unit Description:**

The Special Waste Storage Area is located outside the north wall of the BARBY Building. Drums containing nonhazardous wastes are transported into this unit after they are filled in Special Waste Satellite Accumulation Areas (SWMU 3) or along production lines. Drums are stored in five bays, and the unit's maximum capacity is reached by storing the drums in each bay four high, two across, and eight deep, for a total of 320 drums. When the unit is nearly full, the wastes are shipped off site for disposal.

##### **Date of Startup:**

This unit began operating in early 1986 (Gillette, 1993).

##### **Date of Closure:**

This unit is active.

##### **Wastes Managed:**

This unit stores drums of nonhazardous waste solids, primarily filter cakes from various chemical filtering operations, PAGO solids, and empty chemical bags.

##### **Release Controls:**

Sealed drums of nonhazardous waste are stored in an area enclosed by a fence. The drums are stored on the asphalt that surrounds the facility with no secondary containment. Any storm water runoff from this area would be directed to the Skokie Drainage Ditch.

##### **History of Documented Releases:**

No releases from this unit have been documented.

##### **Observations:**

During the VSI, the unit contained over 200 drums of nonhazardous waste solids. The drums were all labelled as either nonhazardous waste or nonregulated waste. The asphalt pad in this area contained several cracks. The drums that could be observed were sealed, and there was no evidence of a release from this unit (see Photograph No. 1).

**SWMU 5****PAGO Waste Treatment System****Unit Description:**

The PAGO Waste Treatment System is used to treat liquid wastes generated from the production of PAGO in the PAGO Building. The system consists of floor trenches, two 5,000-gallon fiberglass reinforced plastic tanks (FRP), and a plate press. Byproducts from the PAGO process are collected at the PAGO reactor, a PAGO filtrate tank, floor drains in the building, and an acid and dust scrubber that collects airborne process fumes and dust. These wastes are collected in one of the FRP tanks; when the tank is full, it is discharged to the other FRP tank, which is a waste treatment tank. In this tank, sodium hydroxide and activated carbon are added to the process wastewater to lower its pH and absorb the PAGO waste. The slurry is then pumped to the plate press, where PAGO sludge is generated (Gillette, 1993). The sludge is stored in the PAGO Sludge Storage Area.

**Date of Startup:**

This unit began operating in April 1991 (Gillette, 1993).

**Date of Closure:**

This unit is active.

**Wastes Managed:**

This unit manages nonhazardous PAGO wastewater.

**Release Controls:**

The unit is located inside the PAGO Building. The floor in this building is trenched, and any liquids washed into the trenches are pumped into this unit.

**History of  
Documented Releases:**

No releases from this unit have been documented.

**Observations:**

During the VSI, this unit was not operating. The floor beneath the FRP treatment tanks and the plate press appeared clean. The floor trenches were stained blue (the color of PAGO). The concrete floor in the PAGO Building was uncracked and sealed. PRC did not observe any evidence of a release from this unit (see Photographs No. 4 and 5).

**SWMU 6****PAGO Sludge Storage Area****Unit Description:**

After PAGO sludge is generated at the plate press in the PAGO Waste Treatment System, it is transferred into a 20-cubic-yard roll-off container in the PAGO Sludge Storage Area outside the PAGO Building's south wall.

**Date of Startup:**

This unit began operating in October 1992 (Gillette, 1993).

**Date of Closure:**

This unit is active.

**Wastes Managed:**

This unit manages PAGO sludge, a nonhazardous special waste.

**Release Controls:**

The steel roll-off container is stored on the asphalt that surrounds the facility. The container is lined with a high-density polyethylene (HDPE) and woven fiber composite. It is covered with tarpaulin to prevent storm water infiltration.

**History of  
Documented Releases:**

No releases from this unit have been documented.

**Observations:**

During the VSI, the roll-off container and the uncracked asphalt pad beneath it appeared clean. The tarpaulin over the container was securely fastened. PRC did not observe any evidence of a release from this unit (see Photograph No. 3).

**SWMU 7****Wastewater Treatment Plant****Unit Description:**

The Wastewater Treatment Plant is located inside the Treatment Building. This unit treats all facility wastewaters except those generated from the production of ZBC. These wastewaters are pumped into a 1,500-gallon wastewater collection sump. Wastewaters are then pumped into the Wastewater Treatment Plant, which consists of a 110,000-gallon equalization/neutralization tank, a lamella plate settler, a 70-gallon polymer flash mix tank in line with a 500-gallon slow mix flocculation tank, an 8-gallon-per-minute (gpm) sand filtration system, two 7.5-foot carbon adsorption towers, and a 9,850-gallon sludge holding tank. Sludge



is pumped into a 15-cubic-foot plate press, generating wastewater treatment sludge that is stored in the Wastewater Treatment Sludge Storage Area (SWMU 8). The unit's total capacity averages about 50 gpm, with a peak hourly flow of about 175 gpm (Gillette, 1993).

<b>Date of Startup:</b>	This unit began operating in January 1992 (Gillette, 1993).
<b>Date of Closure:</b>	This unit is active.
<b>Wastes Managed:</b>	This unit manages all facility wastewaters except those generated from the production of ZBC. Some of these wastewaters may exhibit the characteristic of corrosivity.
<b>Release Controls:</b>	The unit is enclosed in the Treatment Building. The walls and floor are constructed of sealed and uncracked concrete, and dikes and sumps surround each of the treatment tanks. Any spills from the system would be collected in these areas and directed into the equalization tank for full wastewater treatment. Pretreated wastewater is pumped into a 1,000-gallon discharge sump before it is discharged to NSSD (Gillette, 1993).
<b>History of Documented Releases:</b>	No releases from this unit have been documented.
<b>Observations:</b>	During the VSI, the floors in the dikes and sumps were dry. PRC did not observe any evidence of release from this unit (see Photographs No. 7, 8, and 9).
<b>SWMU 8</b>	<b>Wastewater Treatment Sludge Storage Area</b>
<b>Unit Description:</b>	Wastewater treatment sludge generated by the Wastewater Treatment Plant (SWMU 7) is stored in the Wastewater Treatment Sludge Storage Area. This unit is a concrete pad located outside the north wall of the Treatment Building. The pad is surrounded by the asphalt that surrounds the facility.
<b>Date of Startup:</b>	This unit began operating in January 1992 (Gillette, 1993).

**Date of Closure:** This unit is active.

**Wastes Managed:** This unit manages wastewater treatment sludge, a nonhazardous special waste.

**Release Controls:** The steel roll-off container is stored on the asphalt that surrounds the facility. The container is lined with a HDPE and woven fiber composite. It is covered with tarpaulin to prevent storm water infiltration.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** During the VSI, the roll-off container and the concrete pad beneath it appeared clean. The concrete pad was uncracked, but the asphalt surrounding the concrete pad contained small cracks in several places. The tarpaulin over the container was securely fastened. PRC did not observe any evidence of a release from this unit (see Photograph No. 10).

#### **SWMU 9**

#### **Used Oil Storage Area**

**Unit Description:** Used oil from routine equipment maintenance is stored in sealed drums in the Used Oil Storage Area. The unit is not clearly marked, but it is located along the Maintenance Shop's north wall near the northwest corner of the building.

**Date of Startup:** This unit began operating in July 1987 (Gillette, 1993).

**Date of Closure:** This unit is active.

**Wastes Managed:** This unit manages nonhazardous used oil. The facility recently performed a polychlorinated biphenyl (PCB) survey and has found no PCB-containing oils in its used oil.

**Release Controls:** This unit is located inside the Maintenance Shop, which has a concrete floor and concrete masonry unit walls. The floor in the shop is not drained, and the drums are sealed.

History of  
Documented Releases:

No releases from this unit have been documented.

Observations:

During the VSI, one full and one partially full drum of used oil were stored in this unit. The floor beneath the used oil drums appeared clean and uncracked. Drums containing virgin oil were stored next to the used oil drums (see Photograph No. 17).

#### 4.0 AREAS OF CONCERN

PRC identified one AOC during the PA/VSI. This AOC is discussed below; its location is shown in Figure 2.

##### **AOC 1      Former PAGO Building**

When the Former PAGO Building was demolished in the spring of 1991 so that a new boiler building could be erected at that location, the soils beneath the building were stained blue, the color of PAGO. PAGO is one of the facility's products; its primary chemical components are sodium hydroxide, aqua ammonia, sulfuric acid, oleum, pigment, salt, di-o-tolylguanidine, and hydrochloric acid. The facility has not investigated the nature or extent of any contamination at this location but intends to remove any affected soils when the new building is erected in April 1993 (see Photograph No. 2).

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

The PA/VSI identified nine SWMUs and one AOC at the Gillette facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. The AOC is discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. Table 4, at the end of this section, summarizes the SWMUs and the AOC at the facility and the recommended further actions.

### **SWMU 1                      Hazardous Waste Satellite Accumulation Areas**

**Conclusions:** Hazardous Waste Satellite Accumulation Areas are located throughout the facility in the manufacturing buildings. Typically, these units consist of two drums that are stored on a pallet near a production area. Hazardous Waste Satellite Accumulation Areas manage a variety of wastes, including waste methanol (F003), waste SDA-40 (D001), waste P-225 (F003), waste isopropanol and SDA-40 mixture (D001), waste freon and SDA-40 mixture (D001 and F002), and laboratory waste (D001, F003, F005, D022, and D035). Each of the Hazardous Waste Satellite Accumulation Areas contained sealed drums stored on pallets. All were located inside the facility's buildings, which have concrete floors and walls. Liquids entering the floor drains in the buildings are directed to the facility's Wastewater Treatment Plant. No releases from this unit have been documented. The potential for release from this unit to ground water, surface water, air, and on-site soils is low.

**Recommendations:** PRC recommends no further action for this unit at this time.

### **SWMU 2                      Hazardous Waste Storage Area**

**Conclusions:** The Hazardous Waste Storage Area is in the southeast corner of the warehouse. Sealed drums containing all hazardous wastes generated at the facility are stored in this unit for less than 90 days. The unit typically contains no more than two drums, but its capacity is sixteen drums. This unit's RCRA closure was approved by IEPA in September 1989. This unit

is located inside the facility's warehouse. The concrete floor is sealed to the concrete masonry unit walls or to a concrete dike that partially surrounds the unit. The drums stored in the unit are sealed. No releases from this unit have been documented. The potential for a release from this unit to ground water, surface water, air, and on-site soils is low.

**Recommendations:** PRC recommends no further action for this unit at this time.

**SWMU 3                      Special Waste Satellite Accumulation Areas**

**Conclusions:** One Special Waste Satellite Accumulation Area is located in the Powder Building. Another Special Waste Satellite Accumulation Area is located outside the south wall of the Boiler House. Drums containing empty chemical bags, filter cakes, PAGO solids, lauryl alcohol residues, and PAGO dye residues are stored in this unit. One of the Special Waste Satellite Accumulation Areas is located indoors in the Powder Building. The floor and walls in this area are constructed of concrete. The other area is located outdoors on the asphalt that surrounds the facility. In both areas, the drums were sealed and stored on pallets. The potential for a release from this unit to environmental media is summarized below.

**Ground Water, Air, and On-Site Soils:** The potential for a release is low. Although one of the Special Waste Satellite Accumulation Areas is located outdoors, it is on asphalt. Any spilled solid, nonvolatile, and nonhazardous waste could be swept up before being released to these media. If surface water runoff carried any spilled waste away from the spill location, it would probably enter surface water before reaching these media.

**Surface Water:** The potential for a release is low. Although on-site storm sewers discharge directly to the Skokie Drainage Ditch, any spilled solid and nonhazardous waste could be swept up before being released to this medium. Additionally, only small quantities of nonhazardous waste are stored in this unit.

**Recommendations:** PRC recommends no further action for this unit at this time.

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**SWMU 4**

**Special Waste Storage Area**

**Conclusions:**

The Special Waste Storage Area stores drums of nonhazardous wastes. Drums are stored in five bays, and the unit's maximum capacity is reached by storing the drums in each bay four high, two across, and eight deep, for a total of 320 drums. Sealed drums of nonhazardous waste are stored in an area enclosed by a fence. The drums are stored on asphalt with no other secondary. No releases from this unit have been documented. The potential for a release from this unit to environmental media is summarized below.

**Ground Water, Air, and On-Site Soils:** The potential for a release is low. Although the Special Waste Storage Area is located outdoors, it is on asphalt. Any spilled solid, nonvolatile, and nonhazardous waste could be swept up before being released to these media. If surface water runoff carried any spilled waste away from the spill location, it would probably enter surface water before reaching these media.

**Surface Water:** The potential for a release is low. Although on-site storm sewers discharge directly to the Skokie Drainage Ditch, any spilled solid and nonhazardous waste could be swept up before being released to this medium. Any spilled waste could be swept up before being released to this medium.

**Recommendations:**

PRC recommends no further action for this unit at this time.

**SWMU 5**

**PAGO Waste Treatment System**

**Conclusions:**

The PAGO Waste Treatment System is used to treat liquid wastes generated from the production of PAGO. This unit manages nonhazardous PAGO wastewater. It is located inside the PAGO Building. The floor in this building is trenched, and any liquids washed into the trenches are pumped into this unit. No releases from this unit have been documented. The potential for a release from this unit to ground water, surface water, air, and on-site soils is low.

**Recommendations:**

PRC recommends no further action for this unit at this time.

**SWMU 6                      PAGO Sludge Storage Area**

**Conclusions:**                      After PAGO sludge, a nonhazardous special waste, is generated at the plate press in the PAGO Waste Treatment System, it is transferred into a 20-cubic-yard roll-off container in the PAGO Sludge Storage Area. The steel roll-off container is stored on the asphalt that surrounds the facility. The container is lined with a HDPE and woven fiber composite. It is covered with tarpaulin to prevent storm water infiltration. No releases from this unit have been documented. The potential for a release from this unit to ground water, surface water, air, and on-site soils is low.

**Recommendations:**              PRC recommends no further action for this unit at this time.

**SWMU 7                      Wastewater Treatment Plant**

**Conclusions:**                      The Wastewater Treatment Plant treats all facility wastewaters except those generated from the production of ZBC. The unit consists of a wastewater collection sump, a equalization/neutralization tank, a lamella plate settler, a polymer flash mix tank in line with a slow mix flocculation tank, a sand filtration system, two carbon adsorption towers, and a sludge holding tank. The unit's total capacity averages about 50 gpm, with a peak hourly flow of about 175 gpm. The unit is enclosed in the Treatment Building. The walls and floor are constructed of concrete, and dikes and sumps surround each of the treatment tanks. Any spills from the system would be collected in these areas and directed into the equalization tank for full wastewater treatment. Pretreated wastewater is pumped into a 1,000-gallon discharge sump before it is discharged to NSSD. No releases from this unit have been documented. The potential for a release from this unit to ground water, surface water, air, and on-site soils is low.

**Recommendations:**              PRC recommends no further action for this unit at this time.

**SWMU 8                      Wastewater Treatment Sludge Storage Area**

**Conclusions:**                      Wastewater treatment sludge generated by the Wastewater Treatment Plant (SWMU 7) is stored in the Wastewater Treatment Sludge Storage Area. This unit is a concrete pad that is surrounded by asphalt. It manages wastewater treatment sludge, a nonhazardous special waste. This



20-cubic-yard steel roll-off container is stored on the pad. This container is lined with a HDPE and woven fiber composite. It is covered with tarpaulin to prevent storm water infiltration. No releases from this unit have been documented. The potential for a release from this unit to ground water, surface water, air, and on-site soils is low.

Recommendations: PRC recommends no further action for this unit at this time.

**SWMU 9                      Used Oil Storage Area**

Conclusions: Nonhazardous used oil from routine equipment maintenance is stored in sealed drums in the Used Oil Storage Area. The unit is not clearly marked, but it is located along the Maintenance Shop's north wall near the northwest corner of the building. The facility recently performed a PCB survey and has found no PCB-containing oils in its used oil. This unit is inside the Maintenance Shop, which has a concrete floor and concrete masonry unit walls. The floor in the shop is not drained. No releases from this unit have been documented. The potential for a release from this unit to ground water, surface water, air, and on-site soils is low.

Recommendations: PRC recommends no further action for this unit at this time.

**AOC 1                      Former PAGO Building**

Conclusions: Soils beneath the Former PAGO Building are stained blue, the color of PAGO. PAGO is one of the facility's products; its primary chemical components are sodium hydroxide, aqua ammonia, sulfuric acid, oleum, pigment, salt, di-o-tolylguanidine, and hydrochloric acid. The potential for a release from this unit to environmental media is summarized below.

Ground Water, Surface Water, and On-Site Soils: A release to on-site soils has occurred. The potential for a release to ground water and surface water is high. Ground water at the facility is between 4 and 10 feet below ground surface and could be contaminated if the spilled PAGO has migrated below that level. Storm water runoff may be contaminated as it comes into contact with the affected soils surrounding the former building, although most of the affected soil is probably still under the building foundation.

Air: The potential for a release is low. Most of the chemicals used to produce PAGO are not volatile materials.

Recommendations: PRC recommends that the facility perform an investigation to determine the nature and extent of any contamination in this area and remediate any affected soils.

ENFORCEMENT  
CONFIDENTIAL

TABLE 4  
SWMU AND AOC SUMMARY

<u>SWMU</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Hazardous Waste Satellite Accumulation Areas	1986 to present	None	No further action
2. Hazardous Waste Storage Area	1980 to present	None	No further action
3. Special Waste Satellite Accumulation Areas	1981 to present	None	No further action
4. Special Waste Storage Area	1986 to present	None	No further action
5. PAGO Waste Treatment System	1991 to present	None	No further action
6. PAGO Sludge Storage Area	1992 to present	None	No further action
7. Wastewater Treatment Plant	1992 to present	None	No further action
8. Wastewater Treatment Sludge Storage Area	1992 to present	None	No further action
9. Used Oil Storage Area	1987 to present	None	No further action
<u>AOC</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Former PAGO Building	Discovered in 1991	Stained soils around building foundation	Investigate nature and extent of any contamination; remediate any affected soil

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**ATTACHMENT A**  
**EPA PRELIMINARY ASSESSMENT FORM 2070-12**



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE  
IL

02 SITE NUMBER  
ILD 047 031 273

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)

The Gillette Company (Gillette) North Chicago Manufacturing Center

02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER

3500 West 16th Street

03 CITY

North Chicago

04 STATE

IL

05 ZIP CODE

60064

06 COUNTY

Lake

07 COUNTY CODE

097

08 CONG DIST

09 COORDINATES: LATITUDE

45°19'53.0" N

LONGITUDE

87°52'45.0" W

10 DIRECTIONS TO SITE (Starting from nearest public road)

From U.S. Highway 41, exit east on Belvidere Road. Turn south on Green Bay Road, about 0.75 mile from U.S. Highway 41. Drive about 1 mile to County Highway 13 and turn right. The facility's entrance is about 0.25 mile from Green Bay Road on the south side of County Highway 13.

III. RESPONSIBLE PARTIES

01 OWNER (if known)

Gillette

02 STREET (Business, mailing residential)

3500 West 16th Street

03 CITY

North Chicago

04 STATE

IL

05 ZIP CODE

60064

06 TELEPHONE NUMBER

(708) 689-3111

07 OPERATOR (if known and different from owner)

08 STREET (Business, mailing, residential)

09 CITY

10 STATE

11 ZIP CODE

12 TELEPHONE NUMBER

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE

☐ B. FEDERAL:

(Agency Name)

☐ C. STATE

☐ D. COUNTY

☐ E. MUNICIPAL

☐ F. OTHER

(Specify)

☐ G. UNKNOWN

14. OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☒ A. RCRA 3010 DATE RECEIVED: 08 / 14 / 80  
MONTH DAY YEAR

☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / /  
MONTH DAY YEAR

☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

BY (Check all that apply)

☒ YES

DATE 12/08/92

☐ NO

☐ A. EPA

☒ B. EPA CONTRACTOR

☐ C. STATE

☐ D. OTHER CONTRACTOR

☐ E. LOCAL HEALTH OFFICIAL

☐ F. OTHER:

(Specify)

CONTRACTOR NAME(S): PRC Environmental Management, Inc. (PRC)

02 SITE STATUS (Check one)

☒ A. ACTIVE

☐ B. INACTIVE

☐ C. UNKNOWN

03 YEARS OF OPERATION

1957 | Present  
BEGINNING YEAR ENDING YEAR

☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

The facility, which manufactures chemicals for the cosmetic and writing instrument industries, regularly generates the following wastes: waste methanol (F003); waste P-225 (F003); waste isopropanol and SDA-40 mixture (D001); waste freon and SDA-40 mixture (F002); waste SDA-40 (D001); laboratory wastes (D001, D022, D035, F003 and F005); process wastewater (D002); spent petroleum naphtha (D001); and various nonhazardous wastes. Other wastes may be irregularly generated.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Soils near the Former PAGO Building (AOC 1) are stained blue, the color of PAGO. PAGO is a chemical used to prepare writing ink; it contains sodium hydroxide, ammonia, sulfuric acid, oleum, pigment, salt, di-o-tolylguanidine, and hydrochloric acid. Access to the facility is restricted.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)

☐ A. HIGH

(Inspection required promptly)

☐ B. MEDIUM

(Inspection required)

☒ C. LOW

(Inspect on time-available basis)

☐ D. NONE

(No further action needed; complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT

Kevin Pierard

02 OF (Agency/Organization)

U.S. EPA

03 TELEPHONE NUMBER

(312) 886-4448

04 PERSON RESPONSIBLE FOR ASSESSMENT

Ken Valder

05 AGENCY

06 ORGANIZATION

PRC

07 TELEPHONE NUMBER

(414) 821-5894

08 DATE

01 / 29 / 93  
MONTH DAY YEAR

**ATTACHMENT B**  
**VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS**



## VISUAL SITE INSPECTION SUMMARY

The Gillette Company (Gillette)  
North Chicago Manufacturing Center  
3500 West 16th Street  
North Chicago, Illinois 60064  
ILD 047 031 273

Date: December 8, 1992

Primary Facility Representative: Richard Johnson, Plant Manager  
Representative Telephone No.: (708) 689-3111  
Additional Facility Representatives: Thomas Fluhler, Engineering/Maintenance Manager

Inspection Team: Joe Dauchy, PRC Environmental Management, Inc. (PRC)  
Ken Valder, PRC

Photographer: Ken Valder, PRC

Weather Conditions: Cloudy and calm, about 30 °F

Summary of Activities: The visual site inspection (VSI) began at 14:00 with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents.

The VSI tour began at 15:15. During the tour, PRC inspected the facility's solid waste management units (SWMU) and identified one area of concern (AOC). The SWMUs include the Hazardous Waste Satellite Accumulation Areas (SWMU 1), Hazardous Waste Storage Area (SWMU 2), Special Waste Satellite Accumulation Areas (SWMU 3), Special Waste Storage Area (SWMU 4), PAGO Waste Treatment System (SWMU 5), PAGO Sludge Storage Area (SWMU 6), Wastewater Treatment Plant (SWMU 7), Wastewater Treatment Sludge Storage Area (SWMU 8), and Used Oil Storage Area (SWMU 9). The AOC is the Former PAGO Building (AOC 1).

The tour concluded at 16:55, after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 17:15.



Photograph No. 1

Orientation: Northwest

Location: SWMU 4

Date: 12/08/92

Description: Drums of nonhazardous waste are stacked four high in five bays in the Special Waste Storage Area. Empty drums and pallets are also stored in this unit. Empty drum bays are in the left background and right foreground. Only those drums labelled as nonregulated or nonhazardous wastes contain special wastes. The rest of the drums are empty.



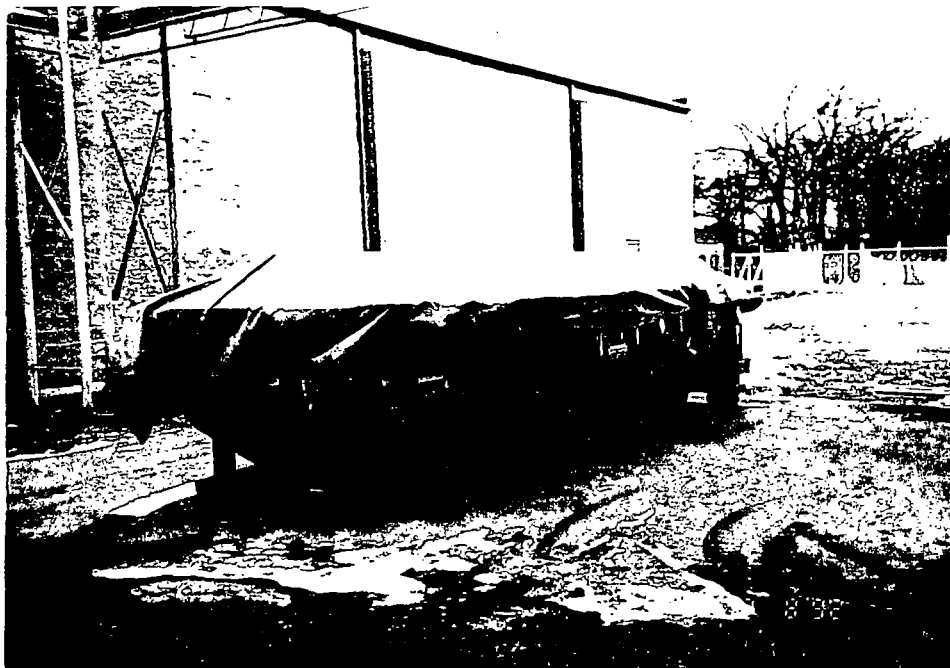
Photograph No. 2

Orientation: Southwest

Location: AOC 1

Date: 12/08/92

Description: The foundation of the Former PAGO Building is all that remains of the structure. Note the blue discoloration on the concrete. PAGO is a blue ink product.



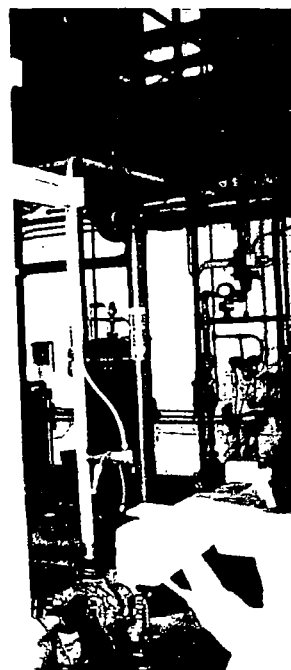
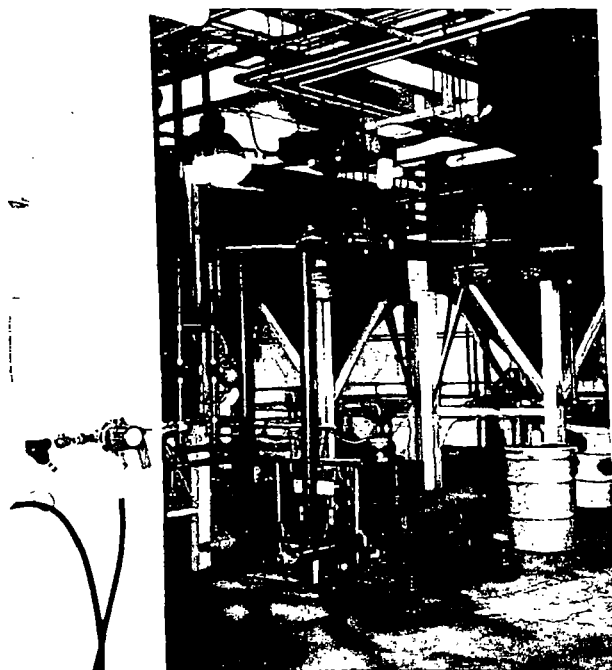
Photograph No. 3

Orientation: Southwest

Location: SWMU 6

Date: 12/08/92

Description: Sludge from the PAGO building's treatment system is placed in a roll-off container in the PAGO Sludge Storage Area.



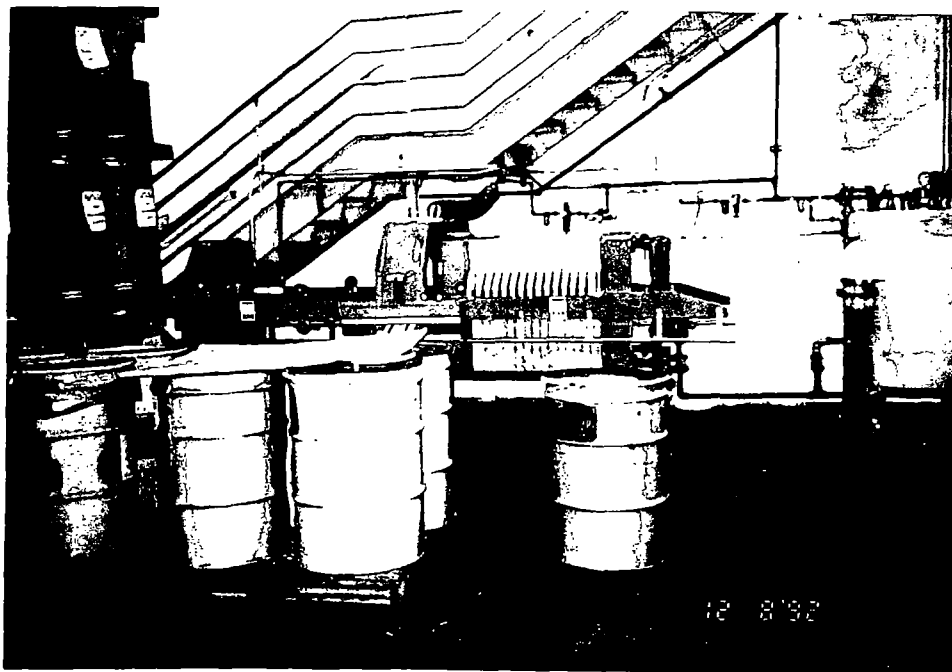
Photograph No. 4

Orientation: Northeast

Location: SWMU 5

Date: 12/08/92

Description: This photograph shows the treatment tanks that are part of the PAGO Waste Treatment System.



Photograph No. 5

Orientation: West

Location: SWMU 5

Date: 12/08/92

Description: This photograph shows the filter press that is part of the PAGO Waste Treatment System. The nonhazardous waste drums in front of the press were brought inside to thaw out so that facility personnel could properly seal them before moving them into the Special Waste Storage Area.



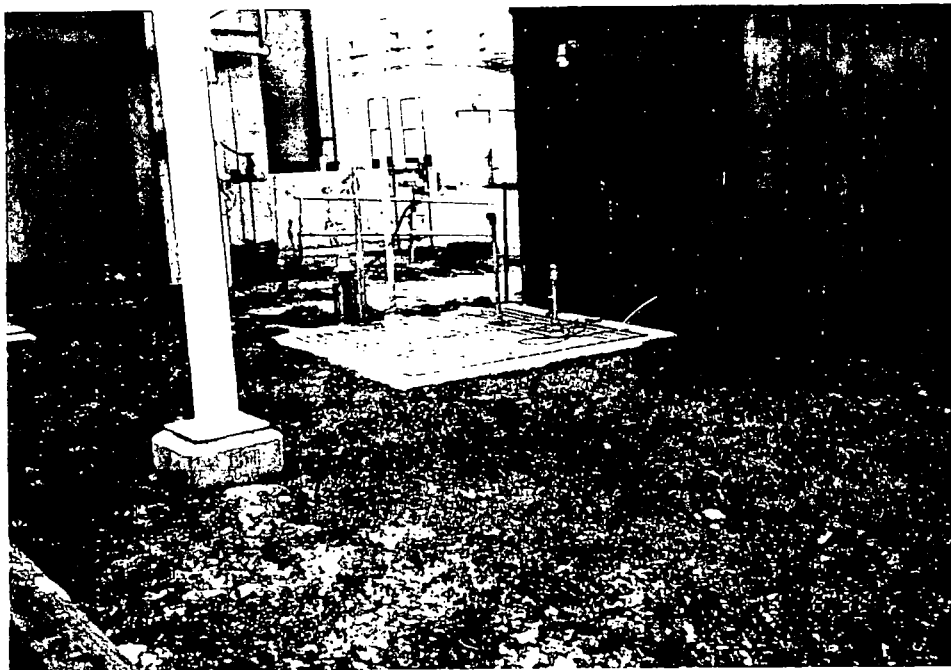
Photograph No. 6

Orientation: East

Location: SWMU 3

Date: 12/08/92

Description: Drums of nonhazardous waste are stacked three high in this Special Waste Satellite Accumulation Area.



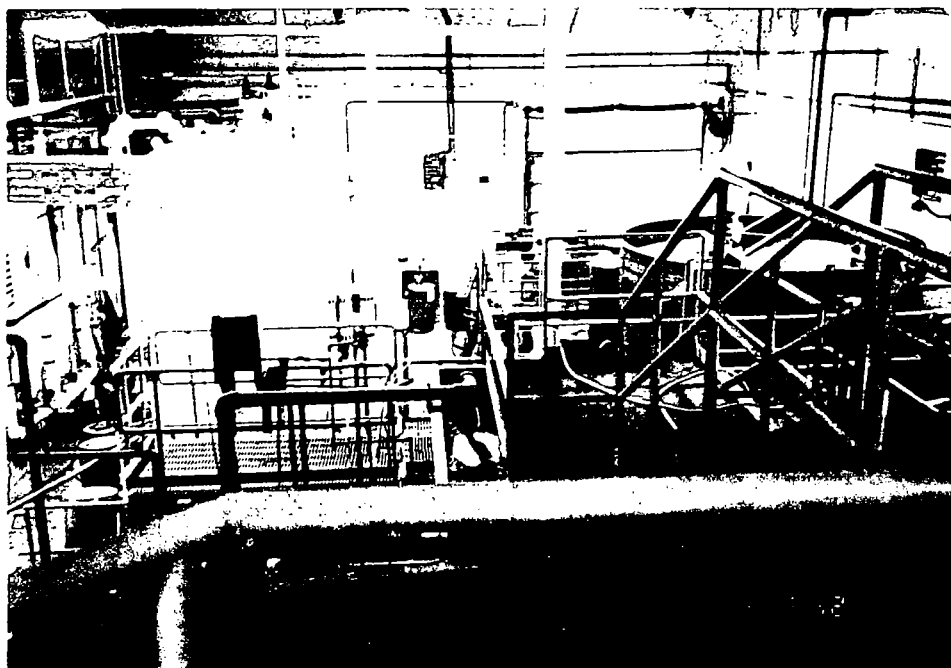
Photograph No. 7

Orientation: Northwest

Location: SWMU 7

Date: 12/08/92

Description: The 1,000-gallon concrete tank beneath the grating was once a neutralization tank; it is now a flow-through tank through which treated wastewater is discharged.



Photograph No. 8

Orientation: West

Location: SWMU 7

Date: 12/08/92

Description: This photograph shows the west end of the Wastewater Treatment Plant.



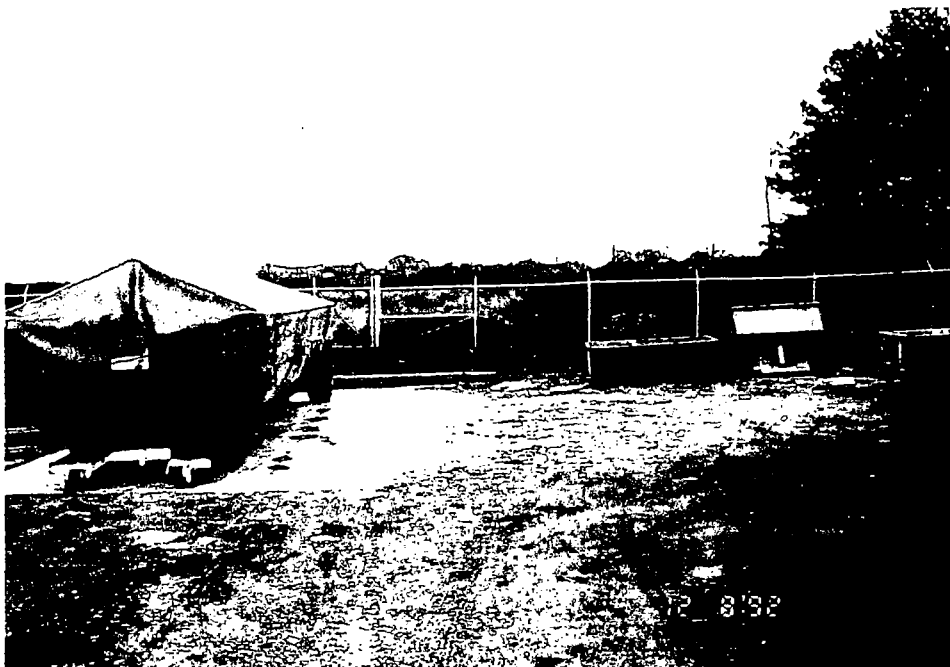
Photograph No. 9

Orientation: East

Description: This photograph shows the east end of the Wastewater Treatment Plant.

Location: SWMU 7

Date: 12/08/92



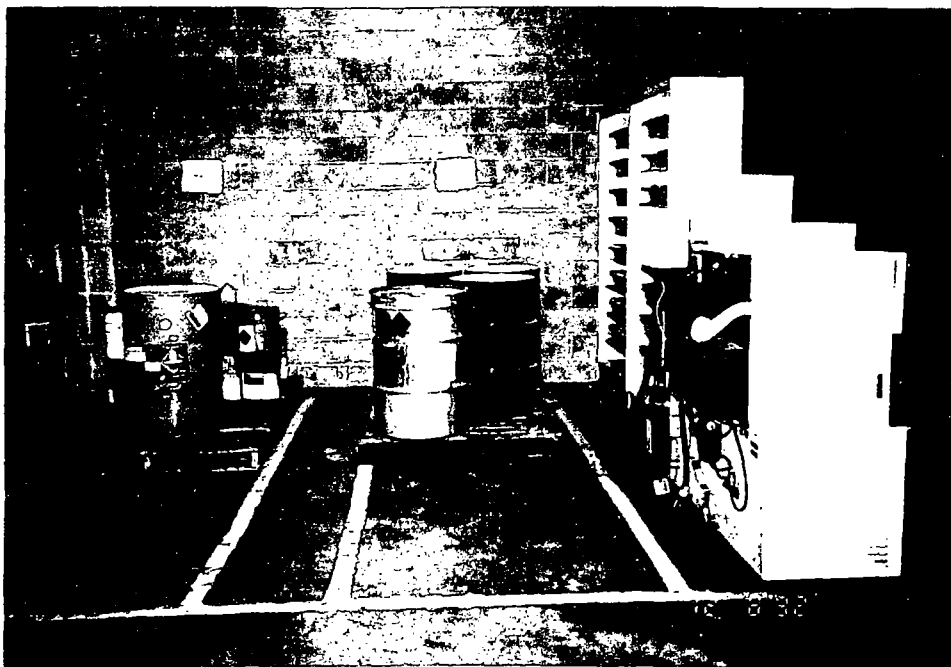
Photograph No. 10

Orientation: East

Description: Wastewater treatment sludge is collected from the plate press in the small (empty) hoppers on the right side of the photograph. When a hopper is full, its contents are transferred into the roll-off container in the Wastewater Treatment Sludge Storage Area.

Location: SWMU 8

Date: 12/08/92



Photograph No. 11

Location: SWMU 2

Orientation: North

Date: 12/08/92

Description: Drums of hazardous waste are stored in the Hazardous Waste Storage Area in the Warehouse.



Photograph No. 12

Location: SWMU 3

Orientation: East

Date: 12/08/92

Description: Drums containing empty glycine bags and ACH filter cake are in a Special Waste Satellite Accumulation Area in the Powder Building.



Photograph No. 13

Orientation: Southeast

Description: Drums of D001 and F003 wastes are in a Hazardous Waste Satellite Accumulation Area in the southeast corner of the Powder Building.

Location: SWMU 1

Date: 12/08/92



Photograph No. 14

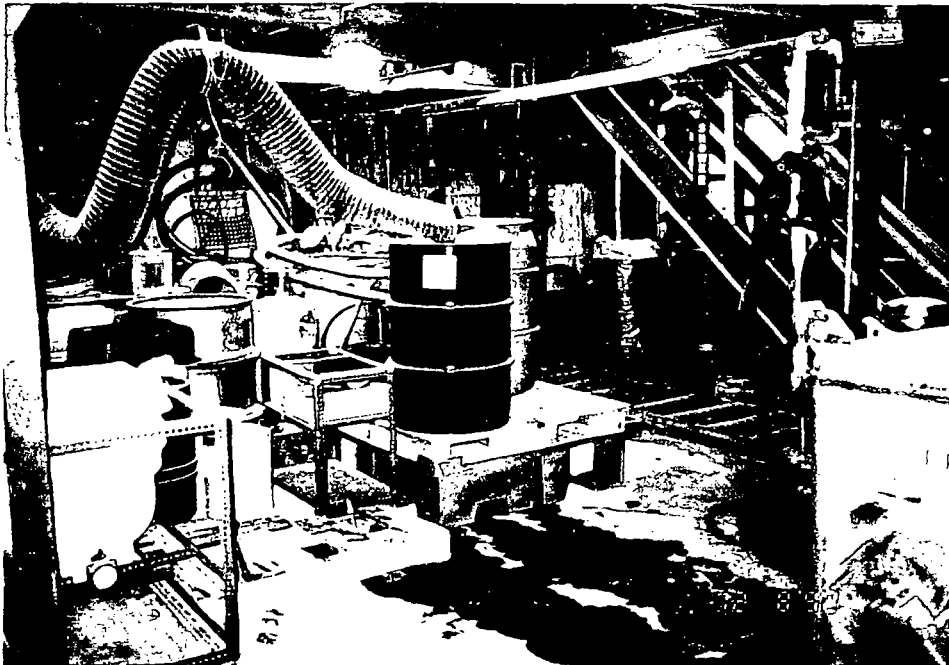
Orientation: Southeast

Description: Drums of D001 and F003 wastes are in a Hazardous Waste Satellite Accumulation Area along the Powder Building's east wall.

Location: SWMU 1

Date: 12/08/92





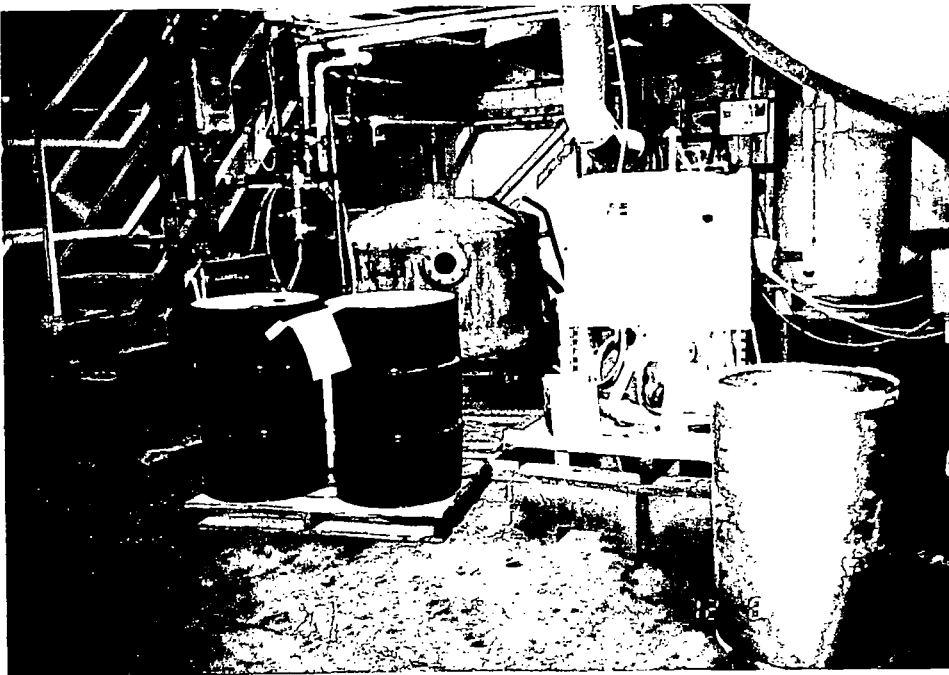
Photograph No. 15

Orientation: Southeast

Location: SWMU 1

Date: 12/08/92

Description: Laboratory wastes are placed in a drum in a Hazardous Waste Satellite Accumulation Area in the northeast corner of the Powder Building. The liquid on the floor did not come from the drum in the satellite accumulation area. This liquid is flowing toward a drain that discharges to the Wastewater Treatment Plant (SWMU 7).



Photograph No. 16

Orientation: Northwest

Location: SWMU 1

Date: 12/08/92

Description: Drums of D001 and F003 wastes are normally stored in a Hazardous Waste Satellite Accumulation Area in the BARBY Building. The area is currently inactive.



Photograph No. 17

Orientation: Northeast

Location: SWMU 9

Date: 12/08/92

Description: Two drums of used oil are stored in the Used Oil Storage Area; drums of virgin oil are also stored in this area.

**ATTACHMENT C**  
**VISUAL SITE INSPECTION FIELD NOTES**

Dec 8, 1972

The Gillette Co Chem. Div.

3500 W 16th St.

N. Chicago, IL 60644

EPA ID # JD-047-031-227

Only one house was on property. Probably farmland.

Facility on 58 acres. 9 yr

originally 62 acres, some (4 acres)

has been sold to Harsco Corp.

Overall, facility produces near

24-25 million lbs of products

produced per year

Patented facility is solids

removal, pH adj, carbon adsorption.

Discharged to Northshore Sanitary

District. Facility just feeds a

discharge permit application.

(Discharge Control Document - DCD)

Filed by 11/20/92, have not heard

from NSD yet. Formerly facility

Le. 8

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District. Facility just feeds a

discharge permit application.

(Discharge Control Document - DCD)

Filed by 11/20/92, have not heard

from NSD yet. Formerly facility

Le. 8

1402 Sign on site.  
Met w/ Tim F. Kline & Dick Johnson

Describe VSI process.

Facility produces raw metal

for toiletries, including chemicals

and dyes

Stds. Property built in 1959 on same

purchased from a widow

Le. 8

mitted discharges. Facility has had 2 incidents

- ① 450 gal ACH-20 discharged; formed ALUM gel (2 yrs ago)
- ② 2 mos ago, propylene glycol (400 gal) discharged, high BOD loading. Slowly discharged. No other NSD loading incidents.

Facility filed a NPDES storm water application w/ IEPA in 1991. Discharges to Skokel Drainage Ditch. No other surface water discharges. Facility has not yet rec'd permit.

Air permits → facility holds 8 permits. ~~As part of P-225 permit~~ <sup>RD</sup>  
No discharges currently exceed for Volatiles

air regulations, even per new CAP.

Currently, 65 people are employed @ the facility on 3 shifts, 7 days per week, 340 days per year. One 2-week maintenance shutdown & 2, 2-day shutdowns.

Facility has records of one spill in 1983. 1,400 gal ethyl alcohol overflowed into ditch; drain valve left open, drained to drainage ditches. No action taken by IEPA. Flowed south from ethyl alcohol tanks into Skokel Drainage Ditch.

Facility has never had any USTs, none currently.  
for Volatiles

Facility has not had any audits or investigations.

Soil and ground water were checked during old PAGO bldg demolition & WWS installation. Some blue dirt (from dye) beneath concrete pad @ old PAGO facility.

No evidence of release based on laboratory results from ground-water sampling when construction borings were made for WWS.

Geologic borings to 20' depth (near area of WWS)

to 1992

### Hazardous waste streams

- Methanol (F003)
  - Isopropanol (D001)
  - Ethanol (D001) (SDA-40)
  - Iso/ethanol mixture (D001).
  - Freon & ethanol mix (F002, D001) used in particle size dist.
- Process changed to stop using freon in late 1991.

- Lab solvents (F003 & F005) from QA laboratory
- Petroleum naphtha from maintenance shop parts cleaner
- Lab packs are irregularly generated.

Main lab facility cleaned out in 1988, accounts for most lab pack wastes,

for use

Nonhazardous wastes  
 • Filtration cakes from various sources → product of raw milk filtration. The filtrate goes to waste  
 cakes are generally drummed  
 LWTP has a 20-cy holding tank  
 for cake, also PAGO These are special wastes.  
 • Gummy drum filter area raw milk & powder drum filter. Some were heavy slipper has changed chemical from benzene to toluene  
 • Large alcohol residues from truck hose drippings (1-2 drums per year)  
 • PAGO ink residues - may not be incinerated. Used to make ink to test it, no longer to PAGO

performed. Milk basically bell-point per ink

Primarily Safety-Kleen & Trade Waste Incineration take wastes

The green wastes also went to Safety-Kleen (no longer open).

See 1991 Hazardous Waste Report (obtained). Spills noted in report occurred inside the plant

ISIS Begin tour

Various non-hazardous wastes stored in 5 bags each bag 4 drums high, 2 wide & deep, max capacity

to PAGO

Wastes shipped and when there's a full load of waste all of it goes to BFI (landfill Harbor) currently filter wastes, Pargo solids, Gunter bags. Waste buried in site in haul trucks

PC 1 NW Asphalt pad  
solid wastes, sealed drums

Old PAGO bldg area. Drums deposited, but have been buried off site waste and drums in site. Filter-trucks to be disposed of. This will be the site of a new bldg house

to U89

East: Residents

New PAGO bldg - Dec 20. 1971  
valley stored in asphalt HDPE liner in ~~water~~ (2) canals with narrow-gauge mesh as well. Covered w/ tarp

PC 3 SW

Pago bldg. Metals mixed in asbestos. Solid / liquids separated. Solids dropped, mixed w/ other raw materials. Liquid undergoes carbon treatment, through plate - filter press, and liquid to WWT. Filter trucks to 2 tanks in NE corner of bldg. S. and go to ~~transfer~~ tanks.

to U8



PIC 4 NE Tanks

PIC 5 W Filter press Drums  
in front of press brought indoors  
to them so they could be  
sealed. Will be taken outdoors  
when completed.

Several nonhazardous waste drums  
are stored in concrete/asphalt  
paved area aboveground tank farm.  
The drums (14 of them) contain  
filter cake mat'l.

PIC 6 E.

The WWTP was changed into the  
former neutralization tank  
(1,000 gal concrete tank set  
in ground) comprised of Hering  
Co. 1000

(a composite tank surrounded  
by concrete).

PIC 7 NW

WWTP set in its own facility

110,000 gal equal/neutral tank.  
All plant waste (except ZBC waste)  
placed here, neutralized, put  
into tank where polymers added,  
through lamella plate settler.  
Water flows through sand filter,  
holding tank, carbon towers, ROTW.  
Sludge from lamella flows  
into plate press

PIC 8 W

PIC 9 E

to 1000

Entire room devoted to a  
 sump in the center of the  
 for neutralization tank, pumped  
 back into next tank.

Filter cake placed outside the

WWT (north side) in a

20-yg rotting w/ a door in

concrete/asphalt. Curved w/ top.

PIC 10 E.

Facility surrounded by 6' fence

tapped w/ right-hand barrel

water. 2 gates monitored

round, the door

In warehouse. Finished goods

along S wall. Row next to S

Aluminum

10-11-2

SE corner is aluminum storage

and has waste accumulation

F003 - water treatment alcohol 2 drums

F003-P275 solvent 1 drum

D001- " spill 1 drum

Usually no more than 2 drums.

but area is held up to 16.

Room ramped, wall/floor interface

sealed, been along outside

walls. About half of this

room was permitted on Part A

PIC 11 N. All drums &

pallets & are stabilized

DA 16. As waste is generated,

it is brought out to the

prod. area SNA

10-11-2

Staging area in production

IBC mfg area. Inorganic  
reaction. Wastewater goes  
directly to discharge. Solid  
material (filter cake) is <sup>not</sup> raw  
material for another process

Detergent mfg area. Squat-25  
& some other products mfg'd here.  
Glycine bags, ALH Filter cake  
stored in 4 alc. drums in  
plant on pallet over concrete  
floor (n-h waste)

PIL 12 E.

Ker Udo

At east end of bldg, one  
SAA containing 1 drum SDA-40  
waste (DOB) & 1 drum P-225  
+ Al-Bri (FOO3). Spent  
solvent from cleaning chemical  
strainers goes into SDA-40  
drum. Floor trenched to WWTP

PIL 13 SE. Drums on  
pallet on concrete floor

Two other drums just N of 1st  
SAA contain waste methyl  
alcohol (FOO3) & waste isopropyl/  
SDA-40 mix (DOO).

PIL 14 SE. 2 drums in background  
are in waste SAA

Ker Udo

Another SAA near NE corner  
of bldg for job waste (D001,  
F003, F005, D022, D035), labels  
waste flammable liquid

PIC 15 SE.

BARBY Bldg. One SAA that  
is currently not active. Would  
contain one drum SDA-40 (D001)  
and 1 drum P-225 (F003)  
Also may have Gantrex liners

PIC 16 NW. View of SAA -  
Note no drums now. Drums  
normally in a pallet over  
concrete floor

~~to VR~~

Dry Antiperspirant powders  
Aqueous spray-dry material

Old SAA for from (F002)  
was in the other ~~of~~ SAA in this  
bldg also

Maintenance shop has a Safety-  
Kleen pants washer w/ petroleum  
naphtha (D001) pumped directly  
into Safety-Kleen trucks.

Waste oil (n-h) from gear boxes,  
gen'l maintenance activities, collected  
in 2 drums near NW corner of  
maintenance area.

PIC 17 NE. 2 Silver used oil  
drums on concrete floor.

~~to VR~~

Facility had a PCB survey performed this year. All PCBs, all to facility rep.

1955

Neighboring the facility

West: Bell Lin, Route #11, developing

Industrial park

All: different development

N: 2 forest preserves & a

municipal Le-A-B-II (closed &

capped)

E: two residences

S: golf course

Closest mty. Most technical  
grants to Tom Fluhler.

1715

Leaving facility

T=30°F. Clear

cloudy skies

Leaving